

- 5) claims 1, 2, 5, 6, 9, 10, and 12 were rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,779,777 (hereinafter "Okuda");
- 6) claims 1-4, 7, 10, and 12 were rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,855,660 (hereinafter "Bujard");
- 7) claims 13, 15, and 18-20 were rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,742,306 (hereinafter "Gompertz") in view of Bujard; and
- 8) claims 13-15, and 21 were rejected under 35 U.S.C. 103(a) as being unpatentable over Gompertz in view of U.S. Patent No. 5,570,205 (hereinafter "Sugita") in view of U.S. Patent No. 5,573,584 (hereinafter "Ostertag").

Election/Restriction Requirement

The Examiner has required election from among the three groups identified in the Office Action. The Applicants affirm the previous telephone election, without traverse, of group I, claims 1-21. The Applicants reserve the right to pursue non-elected claims in the future.

Claim Objection

The Examiner has objected to claim 19 as being unclear. Applicant has amended claim 19 to clearly identify the "bore size" as the bore size of the ink-jet pen. Support for this amendment is found at page 7, lines 4-6; and page 11, lines 18-19. Withdrawal of this objection is respectfully requested.

Rejections Under 35 U.S.C. § 102

The Examiner has rejected claims 1-17 under 35 U.S.C. 102(b) over several references. Before discussing the rejections, it is thought proper to briefly state what is required to sustain such a rejection. It is well settled that "[a] claim is anticipated only if each and every element as set forth in the claims is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil of California*, 814 F.2d 628, 2

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U.S.P.Q. 2d 1051, 1053 (Fed. Cir. 1987). In order to establish anticipation under 35 U.S.C. § 102, all elements of the claim must be found in a single reference. *Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 231 U.S.P.Q. 81, 90 (Fed. Cir. 1986), *cert. denied* 107 S.Ct. 1606 (1987). In particular, as pointed out by the court in *W.L. Gore & Assoc., Inc. v. Garlock, Inc.*, 220 U.S.P.Q. 303, 313 (Fed. Cir. 1981), *cert denied*, 469 U.S. 851 (1984), "anticipation requires that each and every element of the claimed invention be disclosed in a prior art reference." "The identical invention must be shown in as complete detail as is contained in the...claim." *Richardson v. Suzuki Motor Co.* 9 U.S.P.Q. 2d 1913, 1920 (Fed. Cir. 1989).

The Hall Reference

The Examiner has rejected claims 1 and 13-17 as being anticipated by Hall. Applicant respectfully submits that the rejected claims are patentable over the Hall reference for the reasons set forth below, and that the rejection should be withdrawn.

Specifically, the Hall reference teaches forming an ink having special properties of *polarization* of reflected light. See col. 4, lines 60-65. Thus, the light reflected from these inks will be either left-handed or right-handed polarized light which may be printed to produce a stereoscopic image which is viewed using special stereoscopic glasses. See col. 1, lines 15-30. As a result, these inks when printed on a surface have *polarization* dependent viewing properties. The Hall reference specifically states that the addition of "transparent, nonscattering black ink" may be added to effect the saturation of the LC inks. Thus, viewing these inks from various directions will not affect the frequency of perceived light, nor will it affect which particulates will provide viewable reflected light when viewed from a given direction.

In contrast, the present invention produces images which exhibit "directionally dependent light reflective properties." The specification uses this terminology synonymously with a property that reflects multi-colored light. See page 6, lines 14-15. Thus, as the viewing and/or light source angles change, reflected colors can change. Additionally, by changing the direction of the light source and/or the direction that one views the ink, the particulates that reflect light can change in intensity (or go from viewable reflected light to

non-viewable reflected light). Hall does not teach or suggest the use of components that provides these properties.

As the above-described properties are encompassed by the term “directionally dependent light reflective property,” and as these properties are not taught or suggested by Hall, it is respectfully submitted that the claims before the Examiner present allowable subject matter over Hall. Reconsideration is respectfully requested.

The Bishop Reference

The Examiner has rejected claims 1, 8-11 and 13-16 as being anticipated by Bishop. Applicant respectfully submits that the rejected claims are patentable over the Bishop reference for the reasons set forth below, and that the rejection should be withdrawn.

The Bishop reference teaches producing an ink jet ink using essentially *known* pigments and other ingredients. See col. 4, lines 62-67. Bishop teaches that by milling the pigment particles to a smaller size, improved stability and quality is achieved. See col. 9, lines 34-39. The Bishop reference states that the composition of the inks is identical to known inks, but that the milling process differs. See col. 9, lines 29-33. Further, the Bishop reference teaches that large particles of typical pigments are undesirable as they “contribute to light scattering” See col. 9, lines 43-45. Though typical pigments *per se* do not have directionally dependent light reflective properties as defined by the specification, it would appear that the Bishop reference teaches even further away from these properties, avoiding larger particles that contribute to light scattering. This being said, light scattering is distinct from “directionally dependent” reflective properties of the present invention. Specifically, at col. 9, lines 43-45, Bishop notes that such light scattering is the result of an “adversely broadened” spectral absorption band. This light scattering causes a loss of sharpness of color and is undesirable in obtaining a wide variety of bright colors. Thus, based on the type of pigment and the discussion in Bishop, there is no disclosure of a “directionally dependent” property of the pigment particulate, nor is there a suggestion that a change in viewing angle would affect the reflected colors.

In contrast, the particulates of the present invention exhibit multi-colored reflected light with “brilliant color property. See page 10, lines 20-21 of application. Therefore, the

Bishop reference fails to teach each and every element of the claimed invention, and thus, the rejection based thereon should be withdrawn.

The Okuda reference

The Examiner has rejected claims 1-2, 5-6, 9-10 and 12 as being anticipated by Okuda. Applicant respectfully submits that the rejected claims are patentable over the Okuda reference for the reasons set forth below, and that the rejection should be withdrawn.

The Okuda reference teaches forming a “water-in-oil emulsion ink for stencil printing” having a pearlescent pigment therein. See col. 1, line 66 to col. 2, line 5. The stencil printing is accomplished by transferring a relatively thick layer (5 to 20 micrometers) of ink. See col. 1, lines 44-46. Further, the Okuda disclosure requires the presence of an oil phase in which the pearlescent pigment may be contained. See col. 2, lines 32-35.

In contrast, the present invention is specifically drawn towards ink-jet inks. It is important to note that ink-jet inks differ substantially from most ink compositions and involve very different considerations. Particulate size, ink viscosity, and other variables are very considerations taken into account in making a composition which is capable of use in ink-jet applications. For example, ink-jet inks must be capable of flowing through microchannels within the ink cartridge. Additionally, the exit orifice of the ink-jet pen is generally less than 200 micrometers and most often about 60 micrometers or smaller. Thus, particulates may tend to clog these microchannels and orifices. Additionally, particulates should not substantially settle in the ink cartridge over extended periods of non-use. Typically, ink-jet inks have relatively low viscosities in order to achieve such flow. Thus, the use of ink vehicles containing fluids such as water, alcohols, surfactant, and/or similar low viscosity fluids are typically used.

The Examiner has asserted that “ink-jet ink” does not limit the composition to use in an ink-jet environment. However, the preamble can be considered as a limitation in some circumstances. Despite this, claims 1 and 13 have been amended to more clearly highlight the requirement that the ink-jet ink be “ink-jetable.” This amendment is not believed to be narrowing, as the claims as originally filed have this limitation present in the preamble. However, to avoid further rejection on this issue, the claims have been amended. Support for

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these amendments is found at page 7, lines 4-5. See also page 7, line 22; page 8, lines 3-4; and page 10, lines 3-12. The water-in-oil emulsion of Okuda is clearly not ink-jetable and would likely cause significant clogging of the microchannels and orifice of an ink-jet pen. The Examiner is respectfully requested to withdraw the rejection based on Okuda.

The Bujard Reference

The Examiner has also rejected claims 1-4, 7, 10, and 12 as being anticipated by Bujard. Applicant respectfully submits that the rejected claims are patentable over the Bujard reference for the reasons set forth below, and that the rejection should be withdrawn.

Bujard teaches using reflective particles having high goniochromaticity as a pigment in various compositions. Particulates disclosed can be similar to those used in the present invention. However, as in Okuda, the compositions in which it is used are not ink-jetable. Specifically, the pigment is disclosed as suitable for use in paints such as automotive paints. See col. 2, line 45. Additionally, Bujard discloses that the pigment is “embedded in [a] high molecular weight organic material” such as various resins, oils, rubbers, polymers and other similar materials. See col. 9, lines 11-13; col. 9, lines 27-45. The Bujard reference is clearly drawn towards high molecular weight compositions which would not be ink-jetable compositions, but are instead paints, lacquers, and similar high-molecular weight compositions. There is no teaching of an ink-jetable composition in Bujard, therefore applicant respectfully requests that this rejection be withdrawn.

Rejections Under 35 U.S.C. § 103

The Examiner has rejected claims 13, 15, and 18-21 as being obvious in view of various combinations of references. Applicants respectfully submit that the rejected claims are patentable over the cited reference for the reasons set forth below, and that the rejection should be withdrawn.

Before discussing the rejections, it is thought proper to briefly state what is required to sustain such a rejection. The issue under § 103 is whether the PTO has stated a case of *prima facie* obviousness. “The PTO has the burden under § 103 to establish a *prima facie* case of

obviousness.” *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). To satisfy this burden, the PTO must meet the criteria set out in M.P.E.P § 706.02(j):

. . . three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all of the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991).

Moreover, the obviousness analysis must comply with the statutory scheme as explained by the Supreme Court in *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966), namely, consideration must be given to: (1) the scope and content of the prior art, (2) the differences between the prior art and the claimed invention, (3) the level of ordinary skill in the pertinent art, and (4) additional evidence, which may serve as indicia of non-obviousness.

With the above background in mind, Applicants contend that the Patent Office has failed to meet its burden of making a *prima facie* case of obviousness. The Office has failed to show that the cited references disclose each and every element of the claimed invention. Further, there is no motivation or suggestion to combine the cited references in the manner indicated, and Applicants contend that the rejection should be withdrawn.

The Gompertz Reference in view of Bujard

The Examiner has rejected claims 13, 15, and 18-20 as being obvious over Gompertz in view of Bujard. The Gompertz reference merely teaches a system of ink-jet cartridges for producing high quality color images. See Abstract. The present invention includes the use of a specialty ink-jet ink which includes “particulates having directionally dependent light reflective properties.” In Gompertz, there is no suggestion that the disclosed pigments may be used in conjunction with ink-jet applications. Further, as discussed above, the Bujard compositions are configured for use in high-molecular weight compositions such as

automotive paints, lacquers, and resins. Such compositions are significantly different both in composition and application from that of the present invention.

There is no motivation found in Bujard to modify any of the disclosed compositions to arrive at the ink-jetable specialty ink of the present invention as claimed by the Applicants. Even assuming that such a combination were proper, the resulting product would be a high molecular weight lacquer or paint in an ink-jet cartridge which would not satisfy the "ink-jetable" limitation of the claimed invention. Thus, Gompertz and Bujard fail to teach each and every element of Applicant's present claims, and are not properly combinable as required to establish a *prima facie* case of obviousness. Therefore, Applicants submit that the present rejection under 35 U.S.C. § 103 is improper, and respectfully request that it be withdrawn.

The Gompertz reference in view of Sugita and Ostertag

The Examiner has rejected claims 13, 15, and 21 as being obvious over Gompertz in view of Sugita and Ostertag.

The Ostertag reference teaches an interference pigment for producing images which are not easily duplicated or forged. The examples in Ostertag clearly indicate compositions for use in offset printing. See col. 4, lines 46-48 and col. 5, lines 13-19. In contrast, the present invention utilizes ink-jet technology which requires special considerations in preparation of an ink-jetable composition. The Ostertag reference does not provide a suggestion or motivation to modify the compositions therein to arrive at the present invention. The mentioned motivation in Ostertag, i.e., at col. 1, lines 5-10, is merely a motivation to use the Ostertag invention as disclosed and does not lead one skilled in the art to look toward ink-jet technologies such as Gompertz.

The Sugita reference teaches a facsimile device having a sheet carrier path for original and recording documents. This reference does not disclose any additional elements of the claims of the present invention which would lead to a *prima facie* case of obviousness.

Thus, in summary, there is no teaching or suggestion in any of the cited references to guide or motivate one of ordinary skill in the art to arrive at the Applicants' invention. Accordingly, Applicants respectfully submit that the references also fail to identify each and every element of the claimed invention. As it is the Applicants' belief that the Patent Office

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has not met its initial burden of making a *prima facie* case, Applicants respectfully request that the rejection be withdrawn.

Conclusion

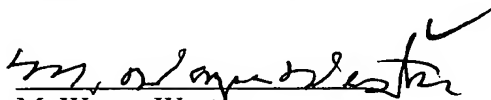
In view of the foregoing, Applicants believe that presently pending claims 1-21 present allowable subject matter and allowance is respectfully requested. If any impediment to the allowance of these claims remains after consideration of the above remarks, and such impediment could be resolved during a telephone interview, the Examiner is invited to telephone the undersigned attorney, or Brad Haymond at (541) 715-0159, so that such issues may be resolved as expeditiously as possible.

Please charge any additional fees except for Issue Fee or credit any overpayment to Deposit Account No. 08-2025

Dated this 27th day of Feb, 2003.

Respectfully submitted,

for


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MARKED-UP VERSION OF AMENDED CLAIMS

Please amend claim 1 as follows:

1. (Once amended) A specialty ink-jet ink, comprising:
an ink vehicle; and
a sufficient amount of particulates having directionally dependent light reflective properties dispersed within the ink vehicle such that when the ink-jet ink is substantially dried on a desired substrate, a multi-colored reflected light is emittable in the presence of a light source, said specialty ink-jet ink being ink-jetable.

Please amend claim 13 as follows:

13. (Once amended) An aqueous ink-jet ink printing system, comprising:
a specialty ink-jet ink comprising an ink vehicle having dispersed therein an effective amount of particulates, said particulates having directionally dependent light reflective properties, and wherein the ink-jet ink is ink-jetable; and
a specialty ink-jet ink pen configured for jetting the ink-jet ink.

Please amend claim 19 as follows:

19. (Once amended) A system as in claim 13 wherein the ink-jet ink pen has a bore size is from 20 microns to 200 microns in diameter.